

probably formed long before the Luray Cavern, which is excavated out of the same limestone formation. The bridge seems to be located in the centre of a gentle basin or syncline in the strata, which may account for the roof of the ancient cavern being left at this special point. The height of the bridge has evidently been much augmented by a lowering of the bed of Cedar creek through the agency of chemical and mechanical erosion after the destruction of the original cavern. The height of the cavity at the point where the bridge now exists being in consequence very much less than the present height of intrados of the bridge arch.

The elevation above ocean level of the railroad track at Natural Bridge Station on the Shenandoah Valley R. R., is 760 feet, and the elevation of Cedar creek under the north face of the bridge arch is 915 feet, as determined by two independent lines of barometric levels which I ran from the railroad station to the bridge. The height of the crown of the arch on the north side at the "Lookout Point" is 188 feet above the creek, measured with a cotton twine, which was the only line of the required length which could be obtained. The same measured by barometer (Short and Mason aluminium aneroid), was determined as 186 feet. Neither of these methods of measurements are sufficiently exact to permit of a final statement, but are of interest in the absence of more definite data. The thickness of the arch under the crown on the north side is approximately 46 feet, and on the south side 36 feet.

Much has been written and published about this Natural Bridge since the appearance, a century ago, of the Travels of the Marquis de Chastellux in North America, in 1780-2, but there appears to be a lack of a complete description of the bridge and its surroundings which is readily available, which would prove of special value to the topographer and geologist.

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*Stated Meeting, November 7, 1884.*

Present, 18 members.

President, Mr. FRALEY, in the Chair.

Col. Ludlow, Dr. Randolph, and Mr. Dickson, new members, were introduced to the presiding officer and took their seats.

Letters of acknowledgment were received from the Royal Academy at Madrid (XVI, i, 113, 114); the Society of Antiquaries of London (415); and the Maine Historical Society (115).

A letter of envoy was received from the Meteorological Office, Royal Society, London.

Donations to the Library were reported from the Royal Academy of Belgium; the Annales des Mines; the Revue Politique; the Meteorological Council of the Royal Society, and London Nature; the Cambridge Philological Society; the Natural History Society at Montreal; the Boston Society of Natural History; the American Philological Association at Cambridge; the American Journal of Science; the American Chemical Journal; the Franklin Institute; Pennsylvania Historical Society; Prof. J. P. Lesley; Mr. Henry Phillips, Jr.; Mr. A. E. Foote; the Wyoming Historical and Geographical Society; the Commissioners of Education; the Secretary of the Navy; the United States Fish Commission; the United States National Museum; the United States Naval Observatory; the Smithsonian Institution; the American Journal of Mathematics; Major Jed. Hotchkiss, of Staunton, Va.; the editor of the Western Magazine, Cleveland; the Colorado Scientific Society; the Astronomical Observatory of Mexico, and the Imperial Observatory of Rio de Janeiro.

Dr. Rushenberger accepted his appointment to prepare an obituary notice of Dr. R. E. Rogers.

Mr. Vaux accepted his appointment to prepare a notice of Mr. Henry M. Phillips.

The death of Mr. John Biddle, of Philadelphia, October 19, aged 70 years, was announced.

The death of Mr. C. E. Rawlins, of Liverpool, aged 71 years, was announced.

Dr. Syle exhibited copies of the Shanghai Chinese Illustrated News, picturing the defeat of the French troops by the Chinese in the late battles; and described the peculiarities of the structure of the Chinese language.

Prof. Cope presented "An Analysis of the bark of the *Fouquieria splendens*," by Miss Helen C. D. Abbott.

Prof. E. D. Cope mentioned some of the results of his studies on the Batrachian and Reptilian fauna of Mexico and Central America, which had been prosecuted by the use of material mainly placed at his disposal by the Smithsonian Institution.

The total number of species described up to date is six hundred and ten, which is described as follows :

|             |                    | <i>Genera.</i> | <i>Species.</i> |       |
|-------------|--------------------|----------------|-----------------|-------|
| BATRACHIA.  | { Urodela.....     | 6              | 15              | } 120 |
|             | { Gymnophiona..... | 4              | 7               |       |
|             | { Anura.....       | 31             | 98              |       |
| REPTILIA... | { Crocodilia.....  | 2              | 3               | } 488 |
|             | { Testudinata..... | 11             | 28              |       |
|             | { Lacertilia.....  | 42             | 183             |       |
|             | { Ophidia.....     | 92             | 274             |       |

On motion of Dr. Brinton it was

*Resolved.* The expediency of preparing and printing a Dictionary of the Lenni Lenâpé language, based on that of the Rev. David Zeisberger, and thus completing the presentation of that language, begun in our TRANSACTIONS in 1827 by our former President, Peter Stephen Duponceau, be referred to the Publication Committee, with instructions to report at the first regular meeting in January, 1885.

Pending nominations Nos. 1031, 1032 and new nomination No. 1033, were read, and the meeting was adjourned.

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*Stated Meeting, November 21, 1884.*

Present, 15 members.

President, Mr. FRALEY, in the Chair.

An acknowledgment of the receipt of Proceedings Nos. 112, 114, 115 was received from the Royal Zoölogical Society of Amsterdam.

A letter of envoy was received from the Librarian of the University of California.

A letter was received from the United States Department of the Interior, offering copies of the Blue Book, or Official Register of the United States.

A circular invitation was received from the Natural History Society at Bamberg, to assist at the celebration of its Fiftieth Anniversary, on November 8, 1884.